AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 - 39. (canceled).

40. (previously presented): A high power amplifier system comprising:

a seed source operable to generate seed pulses;

an attenuating device operable to receive and attenuate the seed pulses from said seed source; and

a high power amplifier operable to receive and amplify the attenuated seed pulses from said attenuating device,

wherein the attenuating device is controlled to compensate for changes in amplifier gain, such that the amplified seed pulses maintain a uniform energy as one or both of a repetition rate and an amplitude of the seed pulses is varied.

41. (original): A system as claimed in 40, wherein the attenuating device comprises a down-counting function.

42. (original): A system as claimed in 40, wherein said seed source comprises an associated attenuating means different than said attenuating device.

43. (canceled).

44. (currently amended): A high power fiber amplifier system, wherein the system is a fiber laser amplifier system and comprises:

a monitoring device operable to monitor an emission wavelength of the fiber laser; and

an adjusting device operable to adjust the wavelength of the fiber laser, and

a feedback mechanism receiving an output of said monitoring device and controlling said adjusting device so that increased stability of the fiber laser output is achieved ~~A high power fiber amplifier system as claimed in claim 43~~, wherein the monitoring device comprises:

a wavelength locker, wherein said wavelength locker monitors the output of the fiber laser based on a transfer function of an etalon and wherein further the transmission of the etalon is measured and a photocurrent of the etalon transmission is compared with a photocurrent from a reference detector.

45. (currently amended): A high power fiber amplifier system, wherein the system is a fiber laser amplifier system and comprises:

a monitoring device operable to monitor an emission wavelength of the fiber laser; and

an adjusting device operable to adjust the wavelength of the fiber laser, and

a feedback mechanism receiving an output of said monitoring device and controlling said adjusting device so that increased stability of the fiber laser output is achieved ~~A high power fiber amplifier system as claimed in claim 43~~, wherein the system is a fiber laser amplifier system and further comprises:

a fiber Bragg grating in the oscillator, wherein the wavelength of the oscillator is monitored and controlled by controlling the temperature of said fiber Bragg grating.

46. (currently amended): A high power fiber amplifier system, wherein the system is a fiber laser amplifier system and comprises:

a monitoring device operable to monitor an emission wavelength of the fiber laser; and

an adjusting device operable to adjust the wavelength of the fiber laser, and

a feedback mechanism receiving an output of said monitoring device and controlling said adjusting device so that increased stability of the fiber laser output is achieved ~~A high power fiber amplifier system as claimed in claim 43~~, wherein the system is a fiber laser amplifier system and further comprises:

a fiber Bragg grating in the oscillator, wherein the wavelength of the oscillator is monitored and controlled by applying mechanical stress on said fiber Bragg grating.

47. (currently amended): A high power fiber amplifier system, wherein the system is a fiber laser amplifier system and comprises:

a monitoring device operable to monitor an emission wavelength of the fiber laser; and

an adjusting device operable to adjust the wavelength of the fiber laser, and

a feedback mechanism receiving an output of said monitoring device and controlling said adjusting device so that increased stability of the fiber laser output is achieved ~~A high power fiber amplifier system as claimed in claim 43~~, wherein the system is a fiber laser amplifier system and further comprises:

a semiconductor saturable absorber, wherein the wavelength of the oscillator is monitored and controlled by varying the temperature of said semiconductor saturable absorber.

48. (canceled).

49. (canceled).

50. (previously presented): A high power fiber amplifier system comprising:

a master oscillator operable to generate a plurality of uniform laser pulses;

a pulse selector operable to receive the plurality of uniform laser pulses from said master oscillator and output one or more selected pulses chosen from the plurality of uniform pulses;

a pulse attenuator operable to receive the selected pulses from said pulse selector and selectively attenuate respective amplitudes of the selected pulses; and

a power amplifier operable to receive the selected pulses from said pulse attenuator and selectively amplify the attenuated respective amplitudes of the selected pulses;

wherein an attenuation level of said pulse attenuator is selected to compensate for changes in amplifier gain with changes in repetition rate.

51. (original): A high power fiber amplifier system as claimed in claim 50, wherein said pulse selector and said pulse attenuator are combined in a single device.

52. (original): A high power fiber amplifier system as claimed in claim 50, wherein said pulse attenuator comprises an acousto-optic modulator.

53. (original): A high power fiber amplifier system as claimed in claim 50, wherein said pulse attenuator comprises an electro-optic modulator.

54. (original): A high power fiber amplifier system as claimed in claim 50, wherein said pulse attenuator comprises an electro-absorption modulator.

55. (original): A high power fiber amplifier system as claimed in claim 50, wherein said pulse selector comprises an optical switch.

56. (original): A high power fiber amplifier system as claimed in claim 50, wherein the attenuated pulses output from said pulse attenuator have progressively increasing amplitudes.

57. (original): A high power fiber amplifier system as claimed in claim 56, wherein output pulses from said power amplifier have a uniform amplitude.

58 - 63. (canceled).

64. (withdrawn): A high power fiber amplifier system as claimed in claim 50, further comprising a controller operable to determine a repetition rate of the uniform laser pulses of said

master oscillator and further operable to reduce, to either zero or a non-zero value, a current provided to a pump diode of said power amplifier.

65. (withdrawn): A high power fiber amplifier system as claimed in claim 64, wherein said controller reduces the current provided to the pump diode when the repetition rate of the uniform laser pulses is other than a nominal value.

66. (withdrawn): A high power fiber amplifier system as claimed in claim 65, wherein said controller reduces the current provided to the pump diode when there is a predetermined difference between the repetition rate of the uniform laser pulses and the nominal value.

67. (withdrawn): A high power fiber amplifier system as claimed in claim 50, further comprising an external timing source operable to generate a reference timing signal, wherein the uniform laser pulses from said master oscillator are synchronized to the reference timing signal.

68. (withdrawn): A high power fiber amplifier system as claimed in claim 67, further comprising an optical laser cavity comprising at least one end mirror, wherein a position of the at least one end mirror is controlled to achieve the synchronization of the reference timing signal and the uniform laser pulses.

69. (withdrawn): A high power fiber amplifier system as claimed in claim 67, further comprising a mode-locked fiber oscillator, wherein a fiber in the oscillator is stretched to achieve the synchronization of the reference timing signal and the uniform laser pulses.

70. (withdrawn): A high power fiber amplifier system as claimed in claim 69, further comprising a phase-locked-loop operable to compare a corresponding phase and frequency of the reference timing signal with a corresponding phase and frequency of the uniform laser pulses and the fiber is stretched based on a result of the comparison.

71. (withdrawn): A high power fiber amplifier system as claimed in claim 67, further comprising a mode-locked fiber oscillator, wherein at least one end mirror of the mode-locked laser's optical cavity is mounted on a movable element to achieve the synchronization of the reference timing signal and the uniform laser pulses.

72. (withdrawn): A high power fiber amplifier system as claimed in claim 71, wherein the movable element comprises a piezoelectric transducer.

73. (canceled).

74. (original): A high power fiber amplifier system comprising:

a master oscillator operable to generate a plurality of uniform laser pulses;

a pulse attenuator operable to receive the selected pulses from said pulse selector and selectively attenuate respective amplitudes of the selected pulses;

a power amplifier operable to receive the selected pulses from said pulse attenuator and selectively amplify the attenuated respective amplitudes of the selected pulses; and

a controller operable to determine a repetition rate of the uniform laser pulses of said master oscillator and further operable to reduce, to either zero or a non-zero value, a current provided to a pump diode of said power amplifier, wherein said controller reduces the current provided to the pump diode when the repetition rate of the uniform laser pulses is other than a nominal value.